

THE UNIVERSITY OF IOWA COLLEGE OF ENGINEERING

IOWA ENGINEER

Volume 2004 Number 1

A
MODEL
OF

PRECISION

Letter from the Dean

Engineering education nationwide is going through a major transformation to better prepare students as business and industry leaders, technologically adept professionals, and socially and culturally conscious citizens on a global level. The transformation is not occurring without challenges and pain. But it is making the UI College of Engineering a stronger leader in academic and research advancement—core to our mission as a state institution. I want to share with you some of the major accomplishments we've experienced in just the past year. That way you too, as alumni, can participate in the feeling of achievement and promise the College enjoys.



P. Barry Butler

Enrollment at the College is on the rise. For Fall Semester 2003, undergraduate enrollment reached 1,209—the largest ever. Graduate enrollment was up significantly, from 338 in Fall 2002 to 383 last fall—a 13% increase.

In Fall 2003, the College took a leadership position in the University and established a new initiative in diversity advancement. The Ethnic Inclusion Effort for Iowa Engineering (eI²) is directed by Victor Rodgers, professor of chemical and biochemical engineering and one of the University's most active and passionate faculty in creating opportunities for underrepresented students. You can read more at www.engineering.uiowa.edu/ethnic-inclusion.

Student perception of teaching continues to be high. Collectively, a large majority of our faculty has consistently received effectiveness ratings of 5.0 or better (on a 6.0 scale) in core, program, and graduate courses.

Research expenditures in 2002–2003 topped \$27.5 million, up 17% from last year. That's \$335,000 per faculty member. College faculty researchers attracted more than \$27 million in research funding last year as well—a 119% increase over the previous year. Larry Weber, associate professor of civil and environmental engineering and associate director of IIHR—Hydroscience & Engineering, and his team received the largest single research grant (\$6.7 million) at the University in 2002–2003.

We developed a new research initiative to make biomedical imaging and image analysis a nationally recognized research program in the College and an integral component of a campus-wide initiative. The effort is being coordinated by Milan Sonka, professor of electrical and computer engineering and a member of the College's Imaging Group.

The University is one of three institutions that will participate in a five-year, \$17 million National Science Foundation (NSF) grant awarded to the Center for Environmentally Beneficial Catalysis, headquartered at the University of Kansas. The Center is a multidisciplinary, multi-university research center led by KU, with the UI and Washington University in St. Louis serving as core partners. Its mission is to develop environmentally friendly and economically viable chemical processes for industry.

A gift from Thomas R. Hanson, a 1960 graduate of the University of Iowa College of Engineering, and his wife, Nancy A. Schneider Hanson, has endowed the Hanson Center for Technical Communication within the college. A majority of the Hansons' gift will be used to support the center, which offers engineering students a comprehensive resource for developing communication skills as part of their engineering education. Like so many generous alumni of the College, Tom Hanson wanted to make a significant difference for future Iowa engineers.

I want to thank you, along with all fellow Engineering alumni, for your belief in making the College an even better educational resource for aspiring engineers. UI Engineering graduates and friends of the College continue to provide the encouragement and support that will make us even more successful in 2004.

P. Barry Butler
Dean

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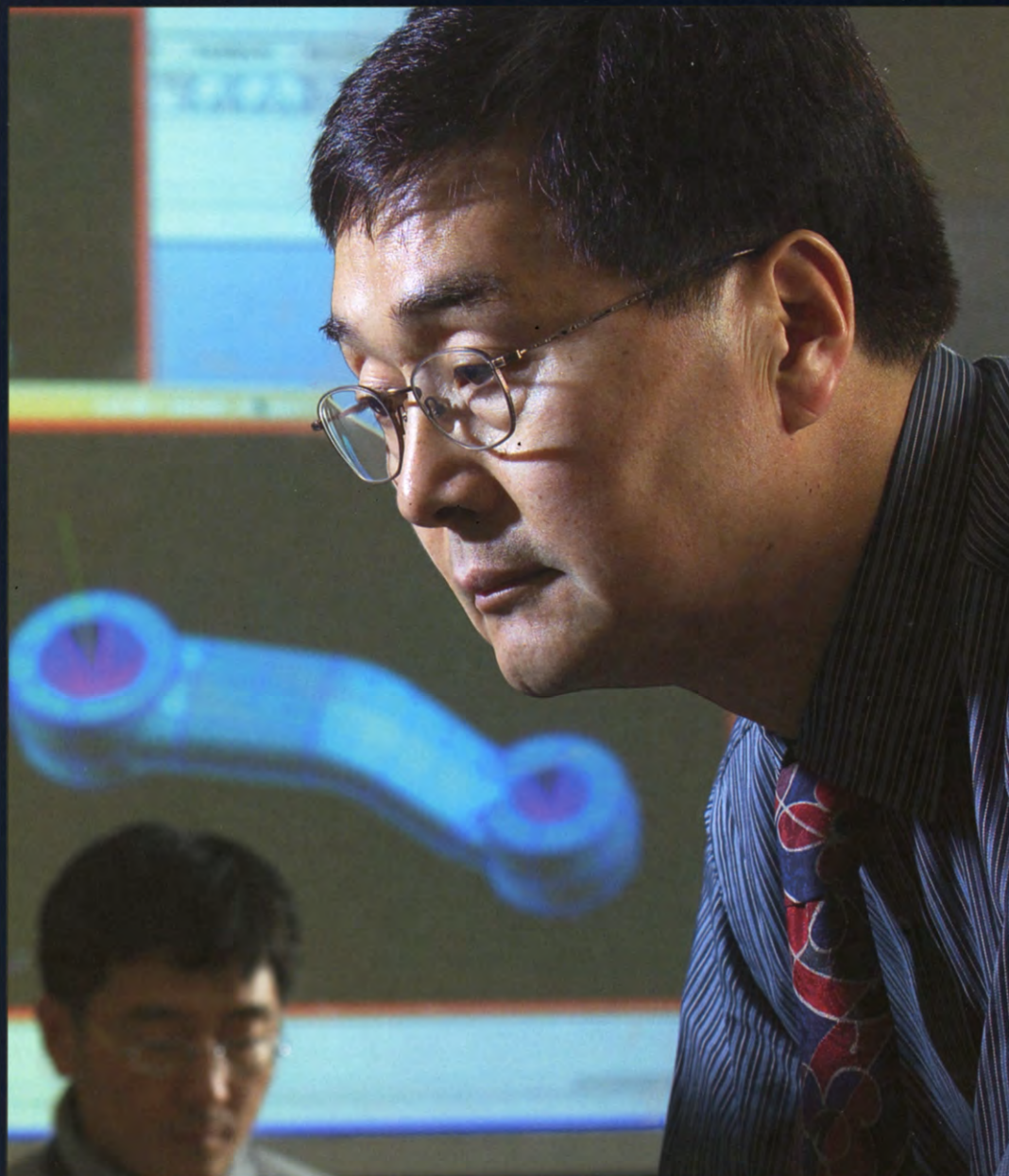
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A Model of Precision

A long-time leader at the University of Iowa's Center for Computer-Aided Design, Professor K.K. Choi strengthens mechanical systems through precise mathematical modeling.



Works in Progress

Both graduates of IIHR—Hydroscience & Engineering, the Uzuner brothers have built careers overseeing major public works projects around the world.

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Real-World Pacesetters

Students in the UI College of Engineering tackle a variety of real-world challenges from improving the water supply for a Mexican town to fine-tuning a NASCAR race car.

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A MODEL OF PRECISION

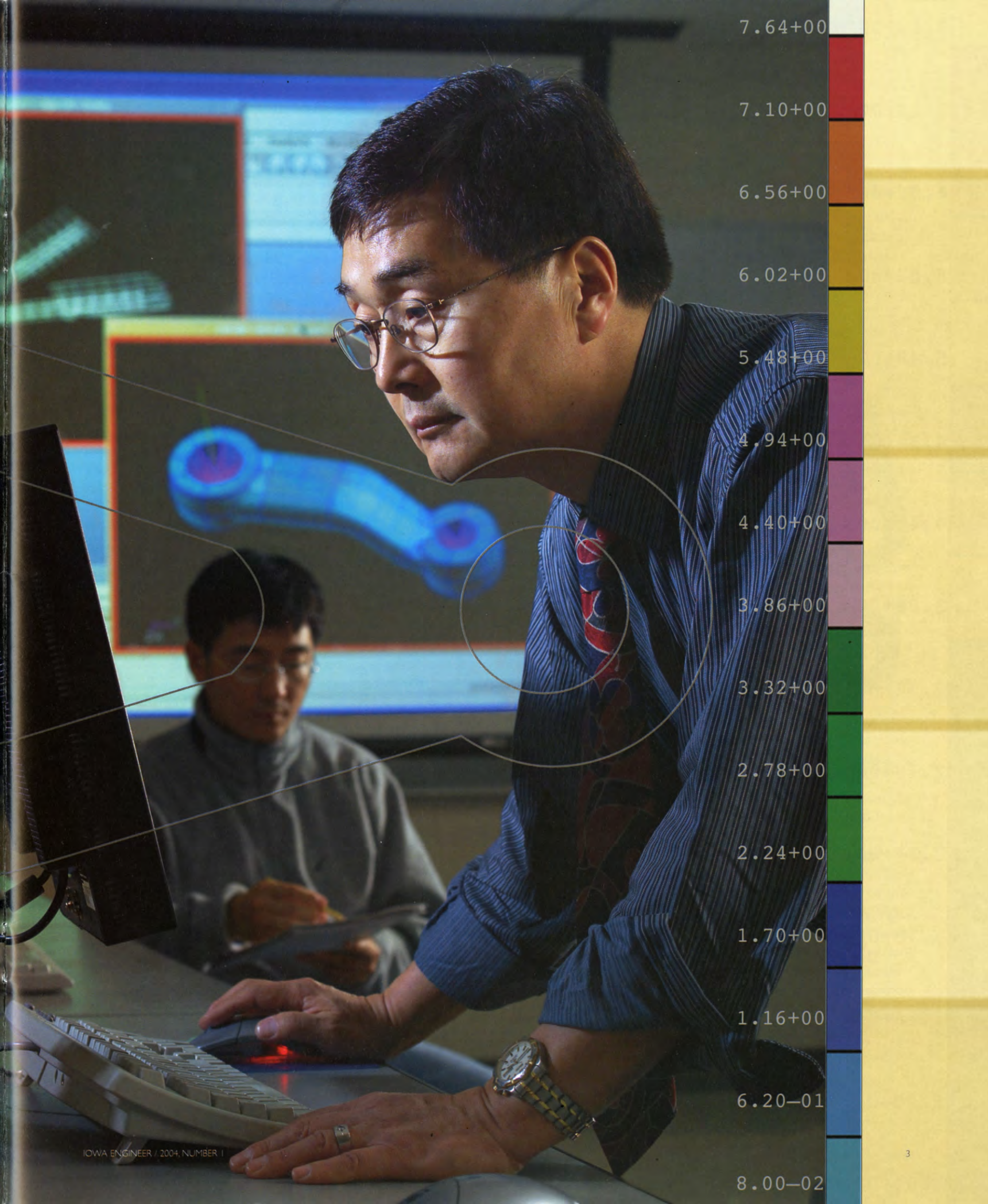
BY JEAN FLORMAN

It's official—
K.K. Choi is a dude.

At least that's how one former student described the University of Iowa Carver Professor of Mechanical Engineering on a recent course evaluation. An Iowa alumnus himself (MS 1977 in mechanical engineering; PhD 1980 in applied mathematics), Choi has honed his teaching and mentoring skills during 19 years as a College of Engineering faculty member.



Professor Choi and Dr. Byeng D. Youn, an Assistant Research Engineer at CCAD, review mathematical models of an Army trailer drawbar and MIAI tank roadarm. Photo by fisheye. Illustrations from Professor Choi's research.



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Many students note that Choi's excellent teaching is rooted in his own research, from which he draws case examples to explain complex ideas in mathematical modeling. And there's no doubt that, like his teaching, Choi's research ranks high on the "durability meter."

Choi has mentored 25 PhD students and three MS students as well as many younger faculty scholars. His superb scholarship, teaching, and service earned him the 2003 Regents Award for Faculty Excellence, awarded by the Board of Regents, State of Iowa. The College of Engineering presented him with its 2002 Faculty Excellence Award for Research, and in 1996 it awarded Choi its Faculty Excellence Award for Service.

From the time he was a graduate student at Iowa in the early 1970s, Choi has developed his research under the auspices of the College of Engineering's Center for Computer-Aided Design (CCAD). He eventually served as the center's associate director, deputy director, and director (1995-2003). Under his direction, the research center, which offers space, facilities, and staff for engineering research, has grown into a community of 14 engineering scholars whose interests include solid mechanics, mechanical system design optimization, human factors, biomedical engineering, and reliability-based design optimization.

Since 1989, Choi's own research has included several projects with Ford Motor Company. These efforts have focused on the development of prototype cars that are relatively lightweight yet provide a smooth, quiet ride. In the first of these projects, completed in 1994, Choi developed and applied software to design the precise thickness of a car's body—no mean feat, considering the average car body consists of more than 150 separate pieces of sheet metal.

"Ford used our software to optimize the vehicle so that it incorporated precisely rolled sheet metal that made the car lighter without sacrificing noise or vibration levels," Choi says. "However, the thickness of the metal cannot be precisely manufactured inexpensively."

The company actually produced six prototype cars—at a cost of more than \$1 million—and invited Choi to come to its Atlanta factory to watch the production of the first optimized vehicle.

"I started at the beginning of the assembly line," Choi recalls, "where there were hundreds of pieces of metal. The company officials said, 'This will all become a car,' and in eight hours, it was."

The six prototypes built in Atlanta were tested in Dearborn, Mich. Although the results were very successful, production costs of such vehicles for consumers would have been staggering.

"Once we tightened the tolerance of the sheet metal precisely," Choi says, "what should have been a \$20,000 car suddenly became a car that would cost close to \$200,000."

Although this particular project did not produce a marketable car, Choi's design optimization methodology is being used by Ford engineers to guide body structure design on several car and truck vehicle programs. The collaboration was a success for Choi too.

"For researchers, this kind of project is a rare opportunity to validate our theories and computational methods," Choi says. "Such validation is extremely important."

"And," he adds, "we listened to what the manufacturer said about its production needs and the needs of the customer, so we learned from industry what's important."

That early project also was the springboard for a research tool Choi has developed, refined, and applied to new projects. Reliability-based design optimization (RBDO) has become the hallmark of Choi's methodology, which has branched into the design of various ground vehicles, both for consumers and for the military. Building on the results from his first efforts with Ford, Choi developed a computer software program to help the manufacturer find the optimal thickness of sheet metal that will enable the manufacturer to

produce, at reduced manufacturing cost, a car that meets certain safety standards. His efforts enabled Ford to simulate crashworthiness in four different accident scenarios.

"In the old days," Choi says, "we had to propose models, build a prototype car, crash it, assess the damage, go back to the beginning of the process, refine the next prototype, crash it...you get the picture."

But Choi's new sophisticated computer software makes simulation possible without repeated prototyping and crashing. As with the earlier Ford project, the Iowa researcher looked at variability in sheet metal thickness and its distribution around the car. The challenge was to find the optimal metal thickness that could at once minimize the vehicle weight but still maintain driver and passenger safety with a minimum of 90 percent reliability. Choi and his research team successfully applied the RBDO process to reduce vehicle weight by more than 30 pounds while maintaining safety and improving reliability from 62.1 percent to 91.2 percent.

The theoretical modeling for this project relied on earlier research Choi conducted for the U.S. Army. Concerned about the failure rate of

ESCAPING THE MESH OF DISTORTIONS

PROFESSOR CHOI'S MOST RECENT WORK USES MESH-FREE DESIGN OPTIMIZATION TO SOLVE PROBLEMS INVOLVING LARGE SHAPE CHANGES AND LARGE MATERIAL DISTORTIONS, SUCH AS IN THE TORQUE ARM AND BRACKET SHOWN ON THESE PAGES.

trailer drawbars in rough terrain, Army personnel asked Choi if he could apply the RBDO techniques to their vehicle mechanical systems.

"They needed a method to predict system failure," Choi says. "Of course, this is different than the noise issue we dealt with when studying cars, but fatigue, safety, and noise really can be seen as simply three common kinds of 'failure.'"

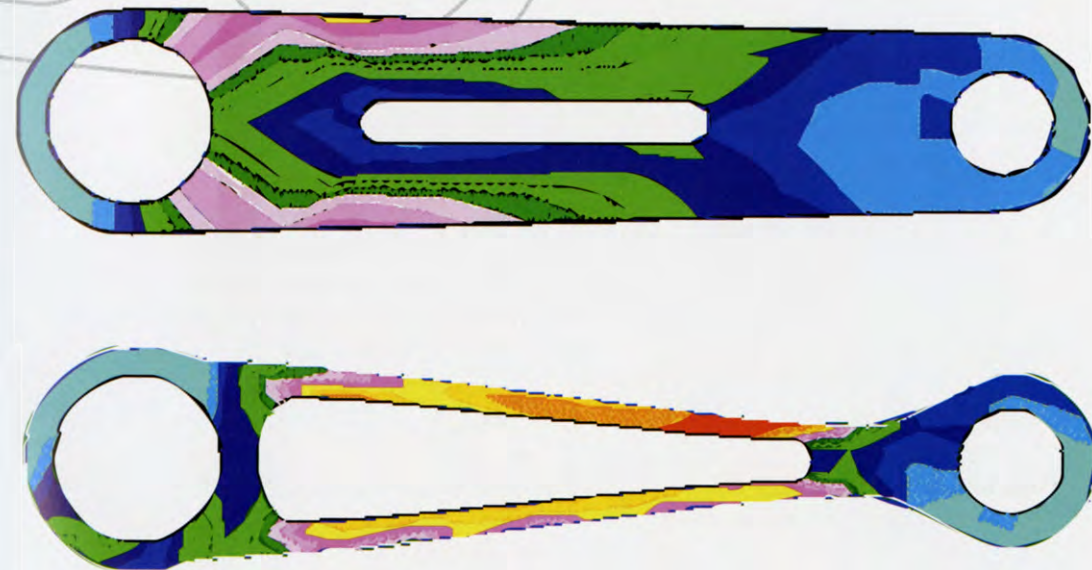
Choi's software and design sensitivity analysis tools managed to optimize the design so that the drawbar's fatigue life was improved more than 5,000 per-

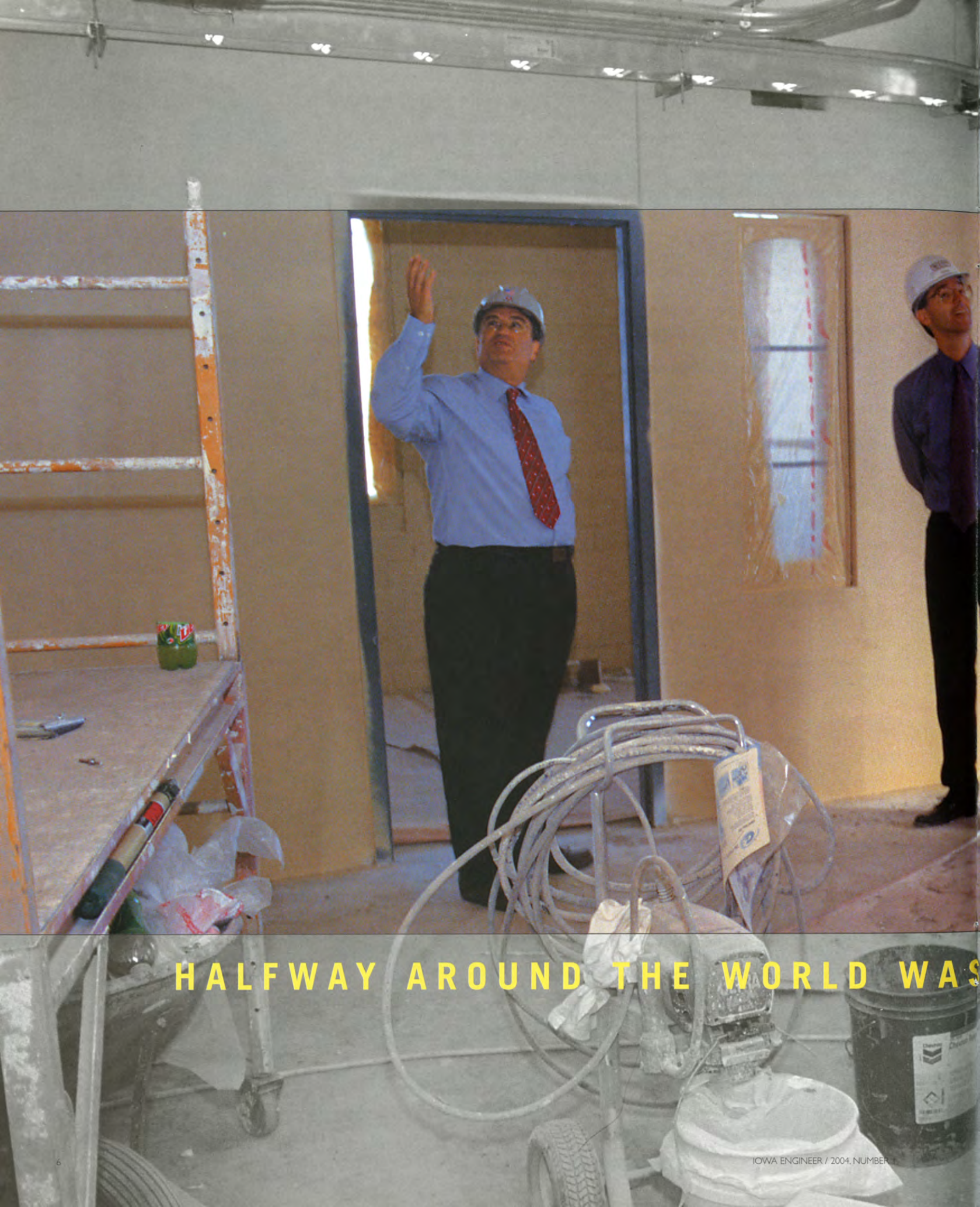
cent while the weight was reduced 40 percent. The Army is validating the optimized drawbar design in preparation for implementing it.

Choi's research contributed to another Army project, to improve ground vehicles for rapid deployment, high mobility, and sustainability. To meet these objectives, the vehicles needed to be lighter and their components reliably durable for sustained missions. Choi's role was to focus on improving fatigue life of a suspension system while simultaneously reducing its weight, by applying the same DRAW tool he had used to assess and redesign the trailer drawbar.

Choi presented his findings at a Society of Automotive Engineers meeting in March 2003, where, he says, "it caught the attention of several generals." The Army is planning to implement the new reliability-based design methods suggested by Choi's research.

Whether his research is military or civilian, Choi focuses on maximizing reliability of mechanical systems within certain parameters of uncertainty. After some 30 years at The University of Iowa, he continues to exhibit precisely the characteristics he studies—reliability, durability, and success in a world of uncertainty.





HALFWAY AROUND THE WORLD WAS



WORKS IN

In 2002, Selcuk Uzuner toured the renovations at the Stanley Hydraulics Laboratory with Dean P. Barry Butler and IIHR Director V.C. Patel (right). Photo by Jon Van Allen.

Progress

by Jean Florman

ONLY THE FIRST STEP

Thirty-two years ago, a young man traveled halfway around the world from his native Turkey to study mechanics and hydraulics in an American prairie town. Mehmet Secil Uzuner (MS 1971, PhD 1974) was so delighted by his experience that he encouraged his younger brother, Ahmet Selcuk Uzuner (MS 1975), to join him and earn a master's degree in the same sub-

jects. After the brothers completed their studies at The University of Iowa, they returned home, where they devoted the next quarter century to engineering and managing massive public works projects and built one of the leading engineering construction firms in the Mediterranean and Middle East.

Today, Secil is chairman and Selcuk is deputy chairman of the board of UZKA Construction Industry and Trade, Inc. The company moniker melds part of the Uzuner name with the Turkish word, "kardes," which means "brother." The size and scope of the company's projects are impressive. For example, the Uzuner brothers have served as project managers for the Istanbul Metro System, which includes 23 kilometers of track and tunnels. Founded in 1986, the company undertakes construction projects across the Middle East and North Africa and has served as the engineering and computer-aided design consultant for construction sites developed by other companies.

After earning his BS degree in civil engineering at Middle East Technical University in Ankara, Secil arrived in Iowa City in 1969 to study hydraulics under the late John F. Kennedy, professor of hydraulic engineering and director of the Iowa Institute of Hydraulic Research. The young scholar's dissertation research focused on the mechanics and hydraulics of river ice jams.

Secil earned his PhD in 1974, then spent two years as the consulting engineer and project manager for design and testing of an ice control structure on the St. Lawrence Seaway. From there, he returned home and joined a highly respected Turkish engineering and construction firm, ENKA.

The talented young engineer quickly rose to become project manager of major public works sites. In Jubail Industrial City, Saudi Arabia, Secil oversaw the construction of a seawater supply/return canal entailing an 800,000-square-meter excavation, 100,000 square meters of concrete, a 1,200-ton steel bridge, and a \$47-million contract. By 1986 he was the assistant gen-

eral manager of all of the company's job sites in Saudi Arabia.

"Secil was in the first class I ever taught at Iowa," says V.C. Patel, who adds with a smile that the elder Uzuner still addresses him as "sir."

"He was a very bright and dedicated student whose pioneering work on river ice won international recognition," says Patel, the University of Iowa Foundation Distinguished Professor of Mechanical and Industrial Engineering, Edwin B. Green Chair of Hydraulics, and director of IIHR-Hydrosience & Engineering (formerly the Iowa Institute of Hydraulic Research). "Secil was a star student of Jack Kennedy and [Professor of Hydraulics and Dean of Engineering] Hunter Rouse, and he loved Iowa City. So of course when it came time for his younger brother to earn a graduate degree, he came here too."

Selcuk Uzuner, who also studied with Patel, focused his graduate work on the design of cooling systems for electric power plants. While at Iowa, he wrote a 700-page report on the optimization of wet/dry cooling towers for the Environmental Protection Agency. Like his brother, he also studied with Rouse, Kennedy, and the late Louis Landwebber, professor of mechanics and hydraulics.

"Selcuk is very sharp and has a fantastic memory," Patel says. "His knack for detail is extraordinary."

But the younger Uzuner's road to a master's degree was not without obstacles. The day before his thesis defense, he accidentally walked through a plate glass window at the local K-Mart.

"I thought it was a door," he says, chuckling at the memory. "I had to call Dr. Patel from University Hospital and tell him I couldn't take my exam."

After a three-month recovery, Selcuk passed the defense with flying colors, then returned to Turkey. He intended to return to Iowa City to complete a PhD, but once back home, he fell in love and got married. One thing led to another, and suddenly 23 years had passed with nary a visit to the town he still calls his "second home."

The Uzuners credit their Iowa educa-



Photo by Jon Van Allen

tion with their success. After Selcuk joined his older brother at ENKA, his various roles included site manager for the construction of an entire town in the Libyan Desert. The three-year project included the creation of three bridges, four sewage pumping stations, sewer, storm water, potable water, and gas delivery systems, telecommunication networks, 16 kilometers of roads, and living quarters for the 4,300-member construction crew. At the age of 26, Selcuk became the youngest project manager of the Riyadh Water District System. During the following years, he designed and directed the construction of heating and cooling systems, water supply tunnels, and water distribution systems at major industrial and residential sites around Turkey and the Middle East.

The brothers never forgot their Iowa friends and mentors.

"For years, he talked about going back to Iowa," says Selcuk's wife, Zehra. "Then one day a few years ago, we were in Chicago, and he said, 'We are going to see Dr. Patel.'"

"I walked into my office that morning," Patel recalls, "and the secretary said I'd gotten a call and that 'a Selcuk Uzuner wants to see you at eleven.' Selcuk apparently had rented a car in Chicago, and at 11 a.m., he and Zehra walked into my office."

Thus began a rekindling of ties between the brothers and their alma mater. Since 1998 both Uzuners have visited the campus several times. Secil's daughter spent a summer studying medicine at Iowa, and Selcuk's son spent his freshman year at the University studying engineering. Last year, in recognition of his engineering and business achievements, Secil was inducted into the College of Engineering Distinguished Alumni Academy.

Today, UZKA not only constructs long-distance and commuter railroads but also produces railroad ties and ceramics. In addition, the company maintains a thriving business in international trade. UZKA's Istanbul corporate headquarters is a showcase for stunning artwork from ancient and modern Turkey. Selcuk says the building's architecture is a metaphor

for the company's philosophy that people should enjoy where they work just as they should enjoy the work they do.

When the Uzuners return to Iowa City, they reflect on the impact the town and University made on their lives.

"Iowa not only gave us a wonderful education," Secil says, "but also provided a window on the best of American culture."

"Like us, Iowans think that if you do something, you should do it well," Selcuk says. "And there is a wonderful humanity there, a way of life that is cordial, sincere, and open."

He adds that he is amazed by the changes that have taken place in the U.S. since he graduated almost 30 years ago.

"Oil prices are no longer 21 cents per gallon, they speak at least three languages in California, and Iowa City is a lot bigger," he says.

And there is one other notable change: The local K-Mart has fixed its plate glass window.

Secil Uzuner, the elder brother, was recently inducted into the UI Distinguished Engineering Alumni Academy (page 17).



THE UZUNERS

credit their Iowa education

with their success. After Selcuk

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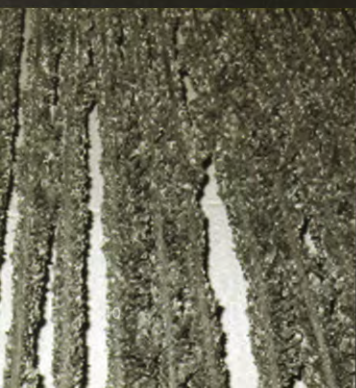
manager for the construction of an

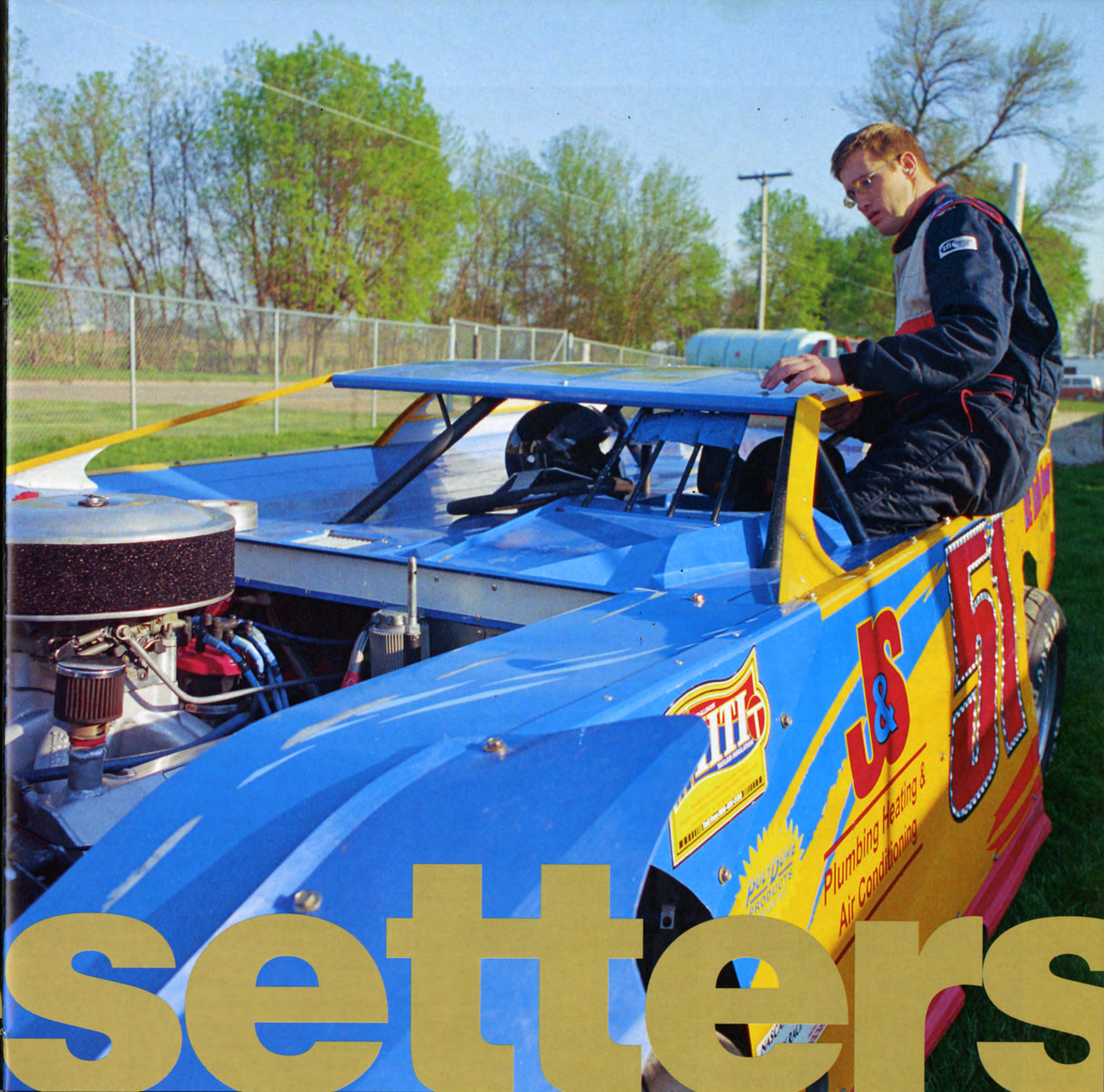
entire town in the Libyan Desert.

University of Iowa engineering students have always imagined how they will apply their newfound knowledge to the world outside the academy. But today's students also seek experiences outside the classroom that will help shape their engineering training. The College of Engineering encourages such cross-fertilization of ideas and experience. Faculty members broaden their curricula to accommodate their students' interests, and they encourage students to participate in special activities that help hone their skills. Whether fine-tuning a NASCAR race car or examining a Mexican water treatment system, Iowa engineering students can't wait to apply their engineering know-how.

REAL-WORLD Pace

by Jean Florman







During his midterm exam last spring, Ori Sivan started

Pages 10–11, left to right: During the 2002 International Perspectives in Water Resources Planning course, held in Argentina (see back cover), students observed mussels on the screens of a dam's power house water intake. The same dam is the site of an experimental fish passage canal. A child smiles in Xicotepec, Mexico. A detailed look at the waste water collection "system" in Xicotepec. The Mexican city welcomed its international visitors with several celebrations, including a rodeo.

Page 11, large photo: Matt Furman prepares to hit the track.

Above left to right: Coffee bean processing effluent flows directly into a receiving stream, which is also used for washing clothes; treatment equipment was installed in 2000, but the chemical costs have been too high for consistent use.

"How do you say 'activated sludge' in Spanish?"

Coffee beans are sorted in large vats of water.

Xicotepec's waste water collects in a system of channels, many of which are improved stream beds; before a distributed water system was installed, those streams were free of the *aguas negras* that flows in them today.

Right: Water is gravity fed for the entire city of Xicotepec, with chlorination as the only treatment. For 3 days each week certain neighborhoods in the southeast go without distributed water. The city has a design team working to improve the pipeline, distribution system, and holding tanks.

"I found myself thinking, 'Who cares about this water treatment stuff, anyway,'" Ori Sivan recalls. "A week later, I was standing on top of a Mexican mountain, staring down a pipe, listening to local people talk about their water troubles—and I knew."

Sivan, a civil and environmental engineering undergraduate student, spent his spring break 2003 in Xicotepec ("HEE-co-tepec"), a community of 70,000 people in the mountains northeast of Mexico City. He and Craig Just, adjunct assistant professor of civil and environmental engineering and IESP Coordinator, were on a team of 50 engineers, economists, business people, and educators who have launched an international, interdisciplinary effort to assess the water quality and delivery problems in the mountain town. The trip was coordinated by members of the Iowa Rotary International, District 6000. Rotary Club members in Mexico offered housing, food, local transportation, and entertainment.

"Xicotepec residents and Rotarians provided hospitality second to none," Just says.

Xicotepec is a vibrant, forward-looking community that built a water distribution system 15 years ago. But once the system was built, the volume of waste increased, and today that waste goes right into open ditches and then into streams.

Federal funding in Mexico focuses on enhancing water distribution, not on improving water quality. And delivery of any kind of water—contaminated or clear—is problematic. A 40-year-old, 12-inch-diameter steel pipe installed by the state-owned Pemex Oil Company delivers water to three major cities and more than

40 villages before even reaching Xicotepec.

In certain neighborhoods of the city, there is no water at all for three days a week. And residents never know which three days those are going to be.

"It's astounding," Sivan says, "that the city has more than 100 inches of rain a year but not enough useable water."

In recent years, Rotary International and the Iowa City Rotary Club have dedicated themselves to providing all people with clean water. At the request of the Xicotepec Rotary Club, Iowa City Rotarians organized a team of specialists to visit the mountain town and assess its water problems. Recognizing the need for experts in environmental and civil engineering, local Rotarians contacted College of Engineering Dean P. Barry Butler.

"I was delighted to tell them that yes, indeed, we want to be involved," says Butler, who recently established the International Engineering Service Program, which provides opportunities for Iowa students to gain practical engineering experience abroad. Butler also suggested the Rotarians invite several engineers from Iowa State University to join the Xicotepec team.

The project has begun to assess Xicotepec's water needs, both domestic and industrial. On their spring visit, Sivan and Just inspected the city's water delivery system, spoke with physicians about local health problems, and listened to city administrators talk about the realities of Mexican political and economic life.

Sivan says that experience threw a bright new light on his engineering studies.

"When my class visited the Iowa City



started to wonder why he was studying engineering.

wastewater treatment plant, I was overwhelmed," he says. "There were buttons everywhere. In Xicotepec, though, there's one pipe with one valve. If it rains, someone hikes up and turns off the valve. From engineering, professional development, and cultural perspectives, this program offers invaluable experience."

Engineers must do more than solve design problems, Sivan adds. They also must understand the cultural and political barriers, as well as environmental challenges, that shape public works projects.

"For me," he says, "the message of Xicotepec was that engineers need to think of ways to be more effective and less expensive."

Craig Just hopes that Iowa students and faculty members can return to Xicotepec next summer to offer workshops at local universities and technical schools, and to help overcome the attitude that nothing can be done to improve the local water quality.

"Xicotepec should be a prime location for decentralized wastewater management options, including constructed wetlands," Just says, "and we'd like to encourage students, engineers, and politicians in the city to consider using such systems."

Recently, Scott Wallace (BS 1986 in civil engineering, MS 1989 in civil and environmental engineering), an engineer at North American Wetland Engineering, designed a constructed wetland wastewater treatment system for a campground in F.W. Kent Park, just west of Iowa City. The technology is gaining wide acceptance for decentralized wastewater management

due to its simple operation and high levels of treatment. The College arranged to videotape the Kent Park wetland installation and provide voice-over narration in English and Spanish. The film will be distributed to professionals in Xicotepec. Through such efforts in Iowa City and abroad, Just and Butler hope to provide Iowa students with more opportunities for interdisciplinary, cross-cultural cooperation.

"We want to produce engineers who not only are skilled in their technical field," Just says, "but who also can work on multidisciplinary teams, develop interper-

sonal skills, and maintain an international perspective and ethical responsibility."

In addition to helping Sivan connect classroom theory and real-world practice, the Xicotepec experience has motivated him to learn Spanish. Although he is fluent in English and Hebrew, Sivan relied on Spanish-speaking members of his team to bridge the language barrier during the trip.

"Some of us thought we spoke the language well enough to get by," he says. "But you have to be pretty good to know how to say 'activated sludge' in Spanish."



When Matt Furman says he's off to the races, he means it.

University of Iowa mechanical engineering graduate student Matt Furman has been behind the wheel of race cars since he was 14.

"A family friend invited my dad and me to come watch a race," he says, "and I was hooked."

Now Furman is a professional NASCAR stock car driver. With enthusiastic support from his professors and the company of his fellow students—three of them his crew members—Furman has managed to combine his passion for auto racing with his engineering education.

During Fall 2002, mechanical and industrial engineering professor Ralph Stephens noticed that several students in his senior Mechanical Systems Design class often related engineering theory and principle to the pragmatics of auto racing. When Stephens talked about fatigue design, for instance, Furman brought in a component that had suffered fatigue failure.

"The interest in auto racing permeated our classroom discussions," Stephens says, "and provided significant engineering knowledge and excitement. Faculty members began using examples from the sport in their courses, and students prepared projects about various aspects of racing."

As the year progressed, about 20 students in five mechanical engineering courses worked on classroom projects related to the popular sport. In addition to Stephens, mechanical and industrial engineering faculty members Ray Han, L.D. Chen, and Richard Hardin wove examples from racing into their courses and mentored students working on engineering projects involving the mechanics of race cars.

James Arkema, a mechanical engineering senior and former professional stock car driver, examined fireproofing of race-car uniforms. Matt Heistad, who was part of the team that built the 2003 Mini-Baja car, joined Furman and two other students in testing the fatigue life of the wheel hubs on Furman's #51 late model dirt track race car. Graduate students Nate Horn (BS 2002 in mechanical engineering) and Kyle Sigl (BS 2001 in biomedical engineering) joined Furman, Heistad, and others in testing the effectiveness of altered shock absorbers from Furman's car—and discovered that less expensive versions actually were more effective. And in response to an inquiry from Arkema, Ray Han developed

a new independent study course on vehicle dynamics and simulation of race cars.

"Engineering has improved my racing career," Furman says, "because it has trained me to solve problems."

"Working on the car helps me understand and remember the conceptual things I've learned in class," he says. "And when I hear something in class that I've experienced out on the track, I'll think, 'Oh—now I know the technical term for that.'"

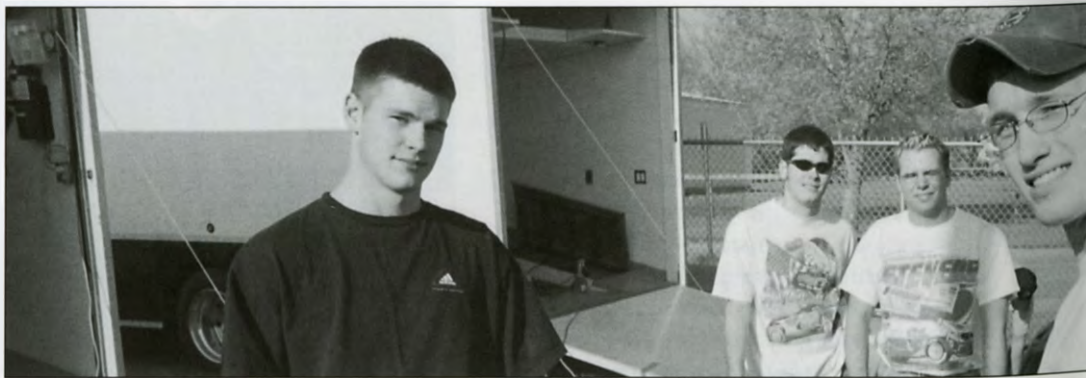
Furman adds that it's important for engineering students to gain practical experience, but he also believes his engineering knowledge gives him an edge over drivers who rely solely on instinct or experience.

And while some drivers may see the young, college-educated driver as something of an interloper, many welcome his generous advice. Furman has built cars for other drivers, and before some races he can be seen working his way around the track, helping his competitors improve their cars.

In 49 races across the Midwest, Furman finished the 2003 NASCAR season ranked 14th in the Midwest Region and placed second in West Liberty, Iowa's weekly series. He dreams of the day he can race in more prestigious NASCAR events such as the Winston Cup, or contribute to the sport as a research engineer. He and his crew continue to sell tee shirts with #51 emblazoned on the front, and sponsors—including Ralph Stephens and his wife Barbara—provide some of the hefty costs of his professional racing career.

Although his mother doesn't like him to drive more than 70 miles per hour, Furman's crew and competitors ascribe his success to his aggressiveness behind the wheel. Off the track, however, he isn't always the center of attention.

"Like most engineers," he says, "I'm kind of shy."





Driver Matt Furman and his crew of fellow engineering students Nate Horn, Thomas Johnson, and Shawn Carr prepare for a night at the Muscatine County Fairgrounds dirt track in West Liberty, Iowa. Photos by Miranda Meyer (and page 11).

Five Engineering Faculty, Staff Receive Excellence Awards

Five faculty and staff members won College of Engineering Excellence Awards in May 2003 for their individual contributions to research, teaching, service, and research staff excellence.



Beckermann

Christoph Beckermann received the Faculty Excellence Award for Service. Beckermann, who joined the UI faculty in 1987, is UI Foundation Distinguished Professor of Mechanical and Industrial Engineering and director of the UI Solidification Laboratory. In addition to conducting internationally recognized research in solidification phenomena and materials processing, Beckermann helped lead development of the college's new curriculum.

Beckermann is a member of six professional societies, six NSF review panels, and one Department of Energy review panel in the thermal sciences area. He has served on four national technical committees and on the editorial boards of five major journals. He has organized 19 symposia at national or international conferences and has been invited as a member of the U.S. delegation for international workshops on thermal science.



Choi

K.K. Choi won the Faculty Excellence Award for Research. Choi, who joined the UI faculty in 1981, is the University of Iowa Carver Professor of Mechanical Engineering and former director of the Center for Computer-Aided Design (CCAD). Choi is a nationally recognized researcher in design sensitivity analysis, mathematical theory of optimization and its application to mechanical systems, mechanical systems analysis, and reliability-based design optimization. He has attracted nearly \$11 million in external funding and

has advised 25 doctoral students and three master's degree students to completion of their degrees.

Choi is a fellow of the American Society of Mechanical Engineers and an associate fellow of the American Institute of Aeronautics and Astronautics. In 2002 he received the Maurice Simpson Technical Editors Award for Design, Test, and Evaluation from the Institute of Environmental Sciences and Technology. He also received the 2003 Regents Award for Faculty Excellence.



Lee

John Lee and H.S. Udaykumar were presented with Faculty Excellence Awards for Teaching. Lee joined the faculty in 1998 and is associate professor of mechanical and industrial engineering and researcher at CCAD. He recently was named a Donald E. Bently Fellow of Engineering.

in the classroom, providing me with two top-notch internship experiences, and enabling me to attend and present at conferences as an undergraduate."

Over the past several years, Lee has become known for his work involving driver response to in-vehicle technology. Mercedes Benz recently named him as one of the world's top 10 researchers on driver distraction. One of Lee's former undergraduate students, currently a departmental fellow at the University of Michigan, credits Lee with preparing her for graduate school "by challenging and trusting me in the laboratory and

Udaykumar, assistant professor of mechanical and industrial engineering and assistant research engineer at IIHR-Hydrosience & Engineering, joined the college in 1999. Udaykumar recently received the Ralph R. Teeter Educational Award from the Society of Automotive Engineers. An undergraduate student wrote, "Dr. Udaykumar is the very definition of what a professor should be. His enthusiasm and passion not only for teaching, but for the subject matters themselves, have been an inspiration to me and to my fellow students."



Udaykumar

Anton Kruger won the Research Staff Excellence Award. Kruger, an associate research engineer at IIHR-Hydrosience & Engineering, was described by his nominator, professor and IIHR director V.C. Patel, as the "ultimate team player" who supports and enhances cross-disciplinary research with his expert knowledge and uses vision and skill to successfully maintain his own independent research focus.

Kruger is a member of the IIHR-Hydrosience & Engineering Water and Air Resources research group, an internationally recognized hydrometeorological research program. He is the sole principal investigator on a NSF project that develops new paradigms of building databases for remote sensing observation, developing exploratory tools for knowledge extraction, and facilitating collaboration across campus and the world.



Kruger

College Inducts Six into Distinguished Engineering Alumni Academy

The University of Iowa College of Engineering inducted six members into its Distinguished Engineering Alumni Academy in June for contributions to personal engineering achievement, leadership, and service to the profession and society. The induction was part of Spring Alumni Reunion Weekend 2003 in Iowa City.



Bartel

Donald L. Bartel (PhD 1969 in mechanics and hydraulics) is director of the Cornell Hospital for Special Surgery Program in Biomechanical Engineering. Bartel has brought mechanical engineering principles to bear on clinical orthopedic problems, resulting in three patents for joint and hip prostheses. His designs, which have been incorporated in several commercially available implant systems and adopted by other designers, have been used in treating hundreds of thousands of patients suffering from arthritis and other joint diseases.

Paul Mac Berthouex (BS 1963 in civil engineering, MS 1964 in sanitary engineering) is professor emeritus of civil and environmental engineering at the University of Wisconsin-Madison. Berthouex's work, which has focused on safe water supplies, includes design of a storm water drainage system around the Schwetzingen Palace in Germany; research and design for three water purification plants in Apia, Western Samoa; and a six-year project to design and build a new engineering campus in Indonesia.



Berthouex



Francis

Philip H. Francis (MS 1960 in mechanical engineering, PhD 1965 in mechanics and hydraulics) is the founder of GroupFrancis, a management consultancy specializing in new product development and in helping colleges and universities to reach their potential through strategic use of e-learning and other tools. During 15 years in senior and executive management positions at Motorola, Square D (Groupe Schneider), AT&T, and Mascon Global Ltd., Francis was responsible for manufacturing technology, corporate technology, quality, and management consulting. He was instrumental in Motorola receiving the first Malcolm Baldrige National Quality Award, in 1988.

Sun Tak-Hwang (MS 1962 and PhD 1965 in chemical engineering) is professor and director of the University of Cincinnati Center of Excellence for Membrane Technology, and codirector of the NSF/University Cooperative Center for Membrane Applied Science and Technology. Hwang is an international leader in membrane research whose early work at The University of Iowa with Professor Karl Kammermeyer set the stage for use of membrane processes in varied industrial applications. In 1998 Hwang received Korea's Ho-Am Prize for his contributions to membrane separation in chemical engineering. He is the author of more than 100 publications and holds five patents.



Tak-Hwang



Maksoud

Henry Maksoud (MS 1954 in mechanics and hydraulics) is an entrepreneur and founder of HIDROSERVICE, a Brazilian engineering consulting and project management company, one of the largest such companies in the world. Maksoud also is a publishing executive, having owned and published VISÃO magazine, one of Brazil's largest weeklies. Maksoud founded SISCO, now called KXYZ-Information Technology, a computer and software manufacturing, systems integration, special applications, and maintenance services company. His hospitality enterprise, HM Hotels e Turismo, includes the Maksoud Plaza, a 5-star hotel he designed and operated.

Mehmet Secil Uzuner (MS 1971 and PhD 1974 in mechanics and hydraulics) is cofounder and head of UZKA Construction Industry and Trade, Inc., of Istanbul, Turkey. UZKA Construction undertakes projects across the Middle East, North Africa, and the Commonwealth of Independent States (CIS) countries. The company is involved in construction, engineering consulting and computer-aided design, and in exporting and importing, acting as a distributor in Turkey for international products. Uzuner's contributions to engineering technology have had a profound impact on the quality of life and technology in the Middle East.



Uzuner

College Welcomes New Faculty



Chen

Yong Chen

Assistant professor, mechanical and industrial engineering

- PhD industrial and operations engineering, University of Michigan, 2003
- MA statistics, University of Michigan, 2003
- BE computer science and engineering, Tsinghua University, Beijing, China, 1998

Professional experience

- Research assistant, operations engineering, University of Michigan
- Research assistant, computer science and technology, Tsinghua University
- Consultant, General Motors, Flint, Mich.

Research interests

- Maintenance decision making
- Process monitoring and diagnosis
- Reliability modeling and analysis
- Manufacturing system design

Tae-Hong Lim

Professor, biomedical engineering

- PhD mechanical engineering, University of Iowa, 1990
- MS mechanical design and production engineering, Seoul National University, 1984
- BS mechanical design and production engineering, Seoul National University, 1982



Lim

Professional experience

- Associate professor, orthopaedic surgery, Rush University
- Associate professor and director, Biomechanics Laboratory, orthopaedic surgery, Medical College of Wisconsin
- Adjunct assistant professor, biomedical engineering, Marquette University
- Research engineer, Central Research Laboratory, Goldstar Company, Seoul, Korea

Research interests

- Spine biomechanics
- Effect of mechanical loads on the cellular activities in the intervertebral discs
- Discogenic low back pain
- Poroelastic analysis of bone
- Mathematical modeling of spinal muscles



Papanicolaou

Thanos Papanicolaou

Associate professor, civil and environmental engineering

- PhD civil and environmental engineering, Virginia Tech, 1997
- MSc civil and environmental engineering, Virginia Tech, 1993
- BS civil engineering, Aristotle University of Thessaloniki, 1990

Professional experience

- Assistant professor, civil and environmental engineering, and coordinator of graduate studies, Washington State University

Research interests

- Fate of contaminated sediments
- Environmental and fluvial hydraulics
- Numerical modeling of fluid-flow and sediment transport phenomena
- River mechanics and morphology
- Turbulent flow
- Image analysis

Albert Ratner

Assistant professor, mechanical and industrial engineering

- PhD aerospace engineering, University of Michigan, 2000
- MS mathematics, University of Michigan, 1999
- MS aerospace engineering, University of Michigan, 1996
- BS engineering and applied science, California Institute of Technology, 1995



Ratner

Professional experience

- Postdoctoral scholar, California Institute of Technology

Research interests

- Combustion
- Laser diagnostics
- Reacting and unsteady flows
- Combustion instability
- Reaction layer dynamics



Xiao

Shaoping Xiao

Assistant professor, mechanical and industrial engineering

- PhD mechanical engineering, Northwestern University, 2002
- MS mechanical engineering, University of Science and Technology of China, 1998
- BS mechanical engineering, University of Science and Technology of China, 1995

Professional experience

- Postdoctoral scholar and research assistant, Northwestern University
- Research assistant, University of Science and Technology of China

Research interests

- Nanotechnology
- Solid mechanics
- Finite element methods
- Meshfree particle methods and topological optimizations

College Announces Storer Entrepreneurial Start-up Award Winners



Storer

Businesses established by College of Engineering students have won Hubert E. Storer Engineering Student Entrepreneurial Start-up Awards. Peace of Mind, Inc. and X-Wires Communications, LLC, were selected as 2002–2003 recipients of the award. Peak Sports, LLC, and Premier Bands, Inc. won for the 2003–2004 academic year.

The Awards were established in 2002 through an endowed gift from College of Engineering alumnus Hubert E. Storer (BS 1959 in industrial engineering). The awards provide initial financial support each year for two Engineering students' technological business plans.

Peace of Mind, Inc., led by Will Lack (BS 2002 in biomedical engineering) and Steve Smetana (BS 2002 in biomedical engineering), designs devices that monitor an infant's respiration to help prevent Sudden Infant Death Syndrome, the third leading cause of death among infants. X-Wires Communications, LLC, is a wireless Internet service provider for downtown Iowa City business and residential customers. Officers include Karsten Temme (BS 2002 in biomedical engineering), Kristopher Halter, a senior in industrial engineering, Andrew Rinner, a senior in management information systems, Erin Wallerich, (BS 2003 in industrial engineering), and Ben Anderson (BS 2003 in economics with a minor in business).

Peak Sports, LLC, founded by Trenton Tollakson (BS 2003 in industrial engineering) and Gabe Palmer, a senior in industrial engineering, provides innovative technology to everyday athletes, including their first product, the Cobra Strap, a universal wrist-free ski pole system.

Premier Bands is an Internet-based business that provides a quick, easy way to purchase music of independent artists online. The owners are Robert Sullivan, a senior in electrical engineering, and Sean Hosseini (BS 2003 in electrical engineering).

Seven College of Engineering students win 2003-04 National Science Foundation Graduate Fellowship Awards

Beth Ficek (BS 2003), chemical and biochemical engineering

Adam Hahn (BS 2003), industrial engineering

Jenna Hetland (BS 2003), industrial engineering

Brian Jeffrey (BS 2002), mechanical engineering

Philip Larese-Casanova (BS 2000), civil engineering

Hannah Lundberg (BS 2002), biomedical engineering

Kristi Schmidt (BS 2002), industrial engineering

Awardees receive an annual stipend of \$27,500, plus tuition and discretionary funds for up to three years of support.

Biomedical Engineering

Kwan Rim, professor, and president of Samsung Advanced Institute of Technology, was featured in the December 2002 issue of NatureJobs newsletter, an on-line career source for scientists. Rim discussed how Samsung and South Korea are planning their future in electronics business growth development. Rim was appointed chair of the board of directors of the Korea Advanced Institute of Science and Technology; he also was appointed by Korea's Ministry of Science and Technology to chair the planning committee for the Development of Science and Technology Centered Society.

Ge Wang, professor, was elected a fellow of the Institute of Electrical and Electronics Engineers.

Chemical and Biochemical Engineering

Gregory R. Carmichael, Karl Kammermeyer Professor of Chemical and Biochemical Engineering, co-director of the Center for Global and Regional Environmental Research, and associate dean for graduate programs and research, presented the Commonwealth Scientific and Industrial Organisation (CRISO) 2003 Priestley Lecture, "Changing Trends in Emissions in Asia: Implications for Acid Deposition, Air Pollution, and Climate" at CSIRO in Melbourne, Australia.

Robert J. Linhardt, professor, received the 2003 Claude S. Hudson Award in Carbohydrate Chemistry from the American Chemical Society.

Victor Rodgers, professor, was appointed director of a College of Engineering initiative titled Ethnic Inclusion Effort for Iowa Engineering. He oversees collegiate efforts to improve recruitment and retention of under-represented ethnic groups in all engineering programs.

Civil and Environmental Engineering

Pedro J. Alvarez, professor; **Gene Parkin**, professor; **Michelle Scherer**, assistant professor; and **Richard Valentine**, professor, received the Project of the Year Award in the Cleanup Division from the Strategic Environmental Research and Development

Program for their project on iron-based bioremediation of RDX-contaminated groundwater.

Witold Krajewski, Rose and Joseph Summers Professor of Water Resources Engineering, was elected a fellow of the American Geophysical Union.

Gene F. Parkin, professor, and director of the Center for Health Effects of Environmental Contamination, was named Donald E. Bently Professor of Engineering.

Larry Weber, professor, and associate director of IIHR—Hydroscience & Engineering, was named a Donald E. Bently Faculty Fellow of Engineering.

Mekonnen Woldemariam, graduate student, and graduate research assistant IIHR—Hydroscience & Engineering, was awarded a NASA Earth System Science Fellowship.

Faculty members serving on American Society of Civil Engineers National Committees include:

Pedro J. Alvarez, professor and research engineer, IIHR—Hydroscience & Engineering, Groundwater Management Committee.

Jasbir Arora, F. Wendell Miller Professor of Engineering, and researcher at the Center for Computer-Aided Design, Technical Activities Division Executive Committee, Analysis and Computation—Technical Administration Committee, and the Optimal Structural Design Committee.

Allen Bradley, associate professor, and research engineer, IIHR—Hydroscience & Engineering, Experimental Uncertainty and Measurement Errors Committee.

Robert Ettema, professor and departmental executive officer, and research engineer, IIHR—Hydroscience & Engineering, Journals and Practice Periodicals Committee, Hydraulics and Waterways Council, and the publications committee for Hydraulics Journal.

Hosin "David" Lee, associate professor, Bituminous Materials Committee, and Imaging Technologies Committee in the division of Technical Activities—Computers and Information Technology.

Tatsuaki Nakato, research engineer, IIHR—Hydroscience & Engineering, Hydraulic Measurements and Experimentation Committee.

Colby C. Swan, associate professor, and researcher at the Center of

Computer-Aided Design, Optimal Structural Design Committee.

Larry J. Weber, associate professor, and associate director, IIHR—Hydroscience & Engineering, Engineering for Fish Bypass and Enhancement Committee.

The Department of Civil and Environmental Engineering was ranked 13th in the nation among leading civil engineering research schools by Engineering News-Record, a McGraw-Hill publication.

Electrical and Computer Engineering

David Andersen, professor, is on a multidisciplinary research team at the UI Optical Science and Technology Center that received a four-year, \$2,564,658 grant from the National Institute of Diabetes and Digestive and Kidney Diseases to develop a novel blood glucose sensor for diabetes management.

Gary Christensen, associate professor, was appointed one of two technical program chairs for the April 2004 Institute of Electrical and Electronics Engineers International Symposium on Biomedical Imaging.

Milan Sonka, professor, delivered several lectures across Europe during October 2002: an invited lecture, "Three- and Four-Dimensional Analysis of Medical Images," at the Technical University of Graz in Austria; a keynote lecture, "Future Research and Development in Medical Image Processing," at the LKEB 2002 workshop in Leiden, the Netherlands; and a plenary lecture, "Virtual Liver Surgery Planning System—Image Processing and Augmented Reality," at the Biomedical Optics 2002 Symposium in Copenhagen, Denmark. Sonka also presented a PhD course, Medical Imaging and Image Analysis, at the Copenhagen Image and Signal Processing Graduate School, Technical University of Denmark. His research paper on virtual liver surgery planning won the Eurographics 2003 Medical Prize.

Andrew Williams, assistant professor, and researcher at the Center for Bioinformatics and Computational Biology, received a three-year, \$771,000 grant from the National Institutes of Health to study how artificial intelligence research might be used with genetic research to pinpoint causes of macular degeneration.

Mechanical and Industrial Engineering

Karim Abdel-Malek, associate professor, and researcher at the Center for Computer-Aided Design; **Jingzhou Yang**, graduate assistant; **Richard Brand**, professor of orthopedic surgery; and **Emad Tanbour**, adjunct assistant professor, and senior project manager at HON INDUSTRIES, Inc., received the Arch T. Colwell award for best paper during the Society of Automotive Engineers 2003 World Congress in Detroit. Abdel-Malek also presented a lecture during the 2003 International VR and Digital Design Conference in Seoul, Korea. Abdel-Malek; **Zan Mi**, graduate assistant; and **Kim Farrell**, master's degree candidate, received the Most Valuable Professional Award from EON Reality, a Sweden-based company, for their work on real-time simulation of human models in immersive virtual environments.

K.K. Choi, professor, and researcher at the Center for Computer-Aided Design (CCAD), conducted a presentation, "An Integrated Design Process for Manufacturing and Multidisciplinary Design Under System Uncertainty," at a plenary session of the Second China-Japan-Korea Joint Symposium on Optimization of Structural and Mechanical Systems. Choi was elected to the executive committee of the International Society for Structural and Multidisciplinary Optimization at the 5th World Congress on Structural and Multidisciplinary Optimization. He also was appointed associate editor for the *ASME Journal of Mechanical Design*. Choi participated at the Society of Automotive Engineers 2003 World Congress in Detroit. Choi and **Jun Dong**, graduate assistant, won the Best Paper Award at the American Society of Mechanical Engineering Design Automation Conference.

Steven Dellabetta, a junior from Bettendorf, Iowa, was awarded a \$2,500 National Academy for Nuclear Training Scholarship for the 2003-2004 academic year. The scholarship program is administered by the academy under the auspices of the Institute of Nuclear Power Operations.

John D. Lee, associate professor, and director of the Cognitive Systems Laboratory, was named a Donald E. Bently Faculty Fellow of Engineering.

The University of Iowa student chapter of the Institute of Industrial Engineers received the 2003 Gold Award from the institute's national headquarters in recognition of the chapter's excellence and strength.

Thomas Schnell, assistant professor, and director of the Operator Performance Laboratory at the Center for Computer-Aided Design, received a \$400,000 grant from the National Cooperative Highway Research Program of the Transportation Research Board to learn how drivers perceive the difference between yellow and white lines.

H.S. Udaykumar, assistant professor, and assistant research engineer at IIHR—Hydroscience & Engineering, received the Ralph R. Teetor Educational Award from the Society of Automotive Engineers.

Center for Bioinformatics and Computational Biology

An interdisciplinary team of faculty members from the UI Colleges of Engineering (Center for Bioinformatics and Computational Biology), Public Health, Liberal Arts and Sciences, and the UI Carver College of Medicine has signed a four-year, \$3-million contract with the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health to help NHLBI-funded scientists at the University advance their work and train UI researchers.

IIHR—Hydroscience & Engineering

Frederick Stern, professor of mechanical engineering and research engineer, and **Joseph Longo**, IIHR assistant research engineer, received a one-year, \$411,550 grant from the U.S. Office of Naval Research to secure advanced equipment for IIHR under the Defense University Research Instrumentation Program (DURIP).

1930s

Theodore "Ted" F. Taylor (BS 1930 electrical engineering) of Hermitage, Tenn., wrote "How the College has changed! So has everything. If I live through October 2003, I'll be 97 years old. I'll never overtake my wife. In early November she'll be 100!! We're both well (for us)."

Himie Voxman (BS 1933 chemical engineering) of Iowa City, Iowa, was named a Lowell Mason Fellow of MENC: The National Association for Music Education, "in recognition of a significant and lasting contribution to music education."

Merrill A. Harkness (BS 1939 electrical engineering) of Albuquerque, N.M., retired vice president of Power Systems Construction, currently manages the computer database for his daughter's health care consulting firm.

1940s

Members of the class of 1943 who returned to Iowa City for their 60th reunion, June 6-7: **Richard E. Lord** (BS 1943 Mechanical Engineering) and his wife Rusty of Golden, Colo.; **Dean H. Johnson** (BS 1943 mechanical engineering) of Orion, Ill.; **Gordon E. Mau** (BS 1942, MS 1943 civil engineering, PhD 1958 sanitary engineering) and his wife Marie of New Hampton, Iowa.

William M. Ellsworth (BS 1947 civil engineering, MS 1948 industrial engineering) has his own naval engineer consulting firm, Ellsworth Engineering in Adamstown, Md. He is the author of *Twenty Foilborne Years*.

I. John Wansik (BS 1947 chemical engineering) of New Port Richey, Fla., celebrated his 80th birthday in May. He writes, "Am still enjoying good health, as I play golf every day, go dancing twice/week, walk two miles 3 times/week, go on cruises and extended auto trips."

Kenneth E. Bratney (BS 1948 civil engineering) of Urbandale, Iowa, showed off his alma mater to grandson and prospective student, Ryan Flaherty of Great Falls, Mont.

1950s

Donald A. Edwards (BS 1950 electrical engineering), a retired national account manager with General Electric Co., lives in Sunriver, Ore. He is an avid golfer in the summer and skier in the winter.

Carl F. Reeder (BS 1950 chemical engineering), retired director of technical services for the Archer Daniels Midland Corn Processing Division, lives in Cedar Rapids, Iowa.

Returning to Iowa City for their 50th class reunion were: Richard E. Larew (BS 1953 mechanical engineering, MS 1973 industrial engineering, PhD 1976 industrial and management engineering) and his wife Louise of Iowa City, Iowa; **Warren Pagel** (BS 1953 chemical engineering) of Hudson, Wis.; **Vernon Rose** (BS 1953 chemical engineering) of Jacksonville, Ill.; and **Harold Wendler** (BS 1953 civil engineering) and his wife Rose of Dixon, Ill.

Metsie A. Olesik (BS 1953 mechanical engineering) and his grandson William, a prospective student, stopped by the College of Engineering in July. Metsie retired as senior/supervising industrial engineer from Eastman Kodak and resides in Rochester, N.Y.

Clifford V. Smith, Jr. (BS 1954 civil engineering) of Corvallis, Ore., was elected to serve as an honorary lifetime director on The University of Iowa Foundation board of directors.

Milton Breslaw (BS 1957 civil engineering) is retired president of George Breslaw & Sons, New York, N.Y. He divides his time between New Jersey and Florida.

Returning to campus for their 45th reunion and looking forward to a well-attended 50th reunion in 2008 were: Wilbur H.T. Busch (BS 1958 mechanical engineering) and his wife Sherry of Marion, Iowa; **Donald W. Campbell** (BS 1958 electrical engineering) of Marshalltown, Iowa; **Carl Fasbinder** (BS 1958 electrical engineering) and his wife lone of Beavercreek, Ohio; **Jerry Hulman** (BS 1958 civil, MS 1967 mechanics and hydraulics) and his wife Janie of Bethesda, Md.; **Gerald Kutsch** (BS 1958 mechanical) and his wife Doris of Waukesha, Wis.; and **Bill Maguire** (BS 1958 mechanical) and his wife Ev of Manistee, Mich.

Gert Aron (BS 1958 civil engineering, MS 1960 mechanics and hydraulics) of Boalsburg, Pa., is actively involved with Habitat for Humanity Small Projects Program helping out with home repairs.

Peter C. Peropoulos (BS 1958, MS 1962 chemical engineering) visited the College of Engineering after 40 years. He is principal process engineer with ABB Lummus Global, Inc., Houston, Tex.

1960s

Elden E. Molter (BS 1960 mechanical engineering) is president of EMCO of Wisconsin, Theresa, Wis.

Robert P. Stearns (BS 1960 civil engineering) was inducted into the Environmental Industry Association's Hall of Fame on June 3 in New Orleans, La. Stearns, Chairman of SCS Engineers, Long Beach, Calif., was recognized for his lifetime dedication to the betterment of the waste industry.

Thomas G. McSwiggin (BS 1961 civil engineering, MS 1962 sanitary engineering) of Springfield, Ill., retired from the Illinois Environmental Protection Agency on December 31, 2002, after 40 years of service to the Illinois Water Pollution Control Board.

Ross M. Iwamoto (BS 1962 electrical engineering) retired from Raytheon Electronic Systems, Tucson, Ariz. He now paints watercolors and volunteers with the YMCA on eliminating racism.

Satindra K. Bewtra (BS 1963, MS 1964 civil engineering) is a project engineering manager with Washington Group International, Wayne, Pa.

Thomas R. Breese (BS 1963 mechanical engineering) is owner of and licensed private investigator with Third-Party Services, Iowa City, Iowa.

Eugene H. Schuchert (BS 1963 mechanical engineering) is a principal engineer with Maytag, Amana, Iowa.

Dennis Zmolek (BS 1963 mechanical engineering) of Marshalltown, Iowa, is retired director of manufacturing engineering from Fisher Controls Co. Int.

Helmut Kobus (MS 1963, PhD 1965 mechanics and hydraulics) retired as professor and director of the Institute for Hydraulics, University of Stuttgart, Germany. Kobus is past president of the International Association for Hydraulic Research.

Kanayo H. Iteke (now H. Ken Wilson-Iteke) (BS 1964 chemical engineering) is living in Kaduna, Nigeria. He established Wilson Soda Co., Ltd., a research and development firm concentrating on adapting and simplifying industrial technologies to local conditions, primarily to reduce size, investment, cost, and foreign content of manufacturing chemicals.

Dave "Tice" Powell (BS 1965 chemical engineering) is a volunteer project manager for a \$5 million expansion of Florida Oceanographic, Stuart, Fla. He is on the Board of Directors and the Finance Committee.

Sikandar Hayat (MS 1965 Mechanics & Hydraulics) is working part-time with a consulting firm (local associates of Mott MacDonald of U.K.). He writes that he misses IJHR and the colleagues with whom he worked.

David W. Hendricks (PhD 1965 civil and environmental engineering) is professor emeritus of civil and environmental engineering at Colorado State University, Fort Collins, Colo.

Paul A. Mundt (BS 1966 electrical engineering) is owner of Mundt Rental Properties in Jackson, Tenn.

Steven Olsen (BS 1967 industrial engineering) has his own consulting firm, Olsen Innovation, L.L.C. in Owatonna, Minn.

Jack R. Rosenberg (BS 1968 industrial engineering) is president of Tailgator, Maquoketa, Iowa. The Tailgator is a portable table that fits in four different receiver hitches.

1970s

Melvin R. Freese (BS 1970, MS 1974 civil engineering) is a consultant in Savannah, Ga.

Major General Michael C. Kostelnik, USAF (ret.) (MS 1970 industrial and management engineering) is deputy associate administrator for space shuttle and international space station, NASA in Washington, D.C.

Ronald Klein (PhD 1970 electrical engineering) is professor of electrical engineering at West Virginia University, Morgantown, W.Va.

Frederick E. Axmear (BS 1972 mechanical engineering, MS 1977 electrical engineering) is a self-employed programmer in Decorah, Iowa.

Zeungnam Bien (MS 1972, PhD 1975 electrical and computer engineering) is professor and director of the Human-Friendly Welfare Robot System Engineering Research Center, Department of Electrical Engineering and Computer Science, Korean Advanced Institute of Science and Technology (KAIST), Daejeon, Korea.

Keith N. Steva (BS 1973 electrical engineering) of San Jose, Calif., is employed with eBay in the Site Operation Group. He was recently involved in the integration of the PayPal Site Operations and IT functions.

Hung Tao Shen (PhD 1974 mechanics and hydraulics) is a professor of civil and environmental engineering at Clarkson University, Potsdam, N.Y.

Roger L. Koch (BS 1976 chemical engineering) is semi-retired and living in Miami, Fla. He was in Iowa City to show his son Jonathan, a prospective student, the College of Engineering.

Lt. Col. Tom Kaldenberg (retired) (BS 1978 industrial engineering) is director of facilities at Kirkwood Community College, Cedar Rapids, Iowa.

Les L. Kuehl (BS 1978 civil engineering) is employed with Deere & Company — Facility Engineering in Moline, Ill.

David Ghaemi (BS 1979 electrical engineering) is president and chief executive officer of Zykronix, Inc., Englewood, Colo., a designer and manufacturer of top-performing, PC-compatible single board computers for use in embedded control applications in the industrial and commercial markets.

1980s

Rachel A.B. McQuillen (BS 1982 civil engineering) of South Jordan, Utah, was elected national president of the Society of Women Engineers.

Rhett E. Livengood (BS 1985 chemical engineering) is director, WWW Marketing & Business Development for Intel Solution Services, Santa Clara, Calif.

Scott D. Wallace (BS 1986 civil engineering, MS 1989 environmental engineering) of Forest Lake, Minn., was recently awarded a patent for his work on soil absorption systems for wastewater disposal.

Gregory J. Kirsch (BS 1987 electrical engineering), a Needle & Rosenberg shareholder and leader of the firm's electronics and software practice, was one of several presenters from around the globe to address the 12th International Intellectual Property Conference held September 3–6, 2003, in Budapest. While in Budapest, Greg also made a presentation to the Hungarian Venture Capital and Private Equity Association, an organization of venture capitalists and investors in Hungary. Also, Kirsch was appointed by the World Intellectual Property Organization (WIPO) to its "List of Neutrals." WIPO, based in Geneva, Switzerland, is the agency of the United Nations responsible for administering international intellectual property (IP) treaties and for providing other international IP-related services. As part of his appointment to the List of Neutrals, Kirsch participated in a mediation workshop at WIPO headquarters in Geneva on June 30 and July 1, 2003. Kirsch is one of the founders of AfterBOT, Inc., the leading provider of digital receipt technology enabling post-sales, customer-focused marketing and business solutions, which was selected as one of the top 100 venture-capital-backed companies for 2002 by *Venture Reporter* in their October 2002 issue.

Athar B. Tayyab (BS 1987, MS 1990, PhD 1993 electrical and computer engineering) is senior engineer and e-business lead with IBM Engineering and Technology Services in Austin, Tex.

James F. Kessen (BS 1988 civil engineering) is vice president of AOS Associates, Oak Park, Ill.

P. Russell Price (BS 1988 mechanical engineering, MBA 2001) was elected vice president by the Stanley Consultants Board of Directors. Price is a project principal in the Muscatine, Iowa office for the Central Region of the Industrial, Utility, and Institutional Business Unit with responsibility for business development, client relations, technical approval, and overall contract administration.

Helen M. Rieland (BS 1989 biomedical engineering) is a systems engineer with EDS, Troy, Mich.

1990s

Kevin D. Dodson (BS 1990 mechanical engineering) is manager, Environmental Engineering Projects Generation Engineering, with MidAmerican Energy, Davenport, Iowa.

Scott D. Ferguson (BS 1990, MS 1991 biomedical engineering) recently filed a patent for a closed wound suction drain. As a senior project engineer in research and development with C.R. Bard Medical Division, Covington, Ga., he is responsible for all new product development and manufacturing support of a line of surgical products currently worth \$70 million in annual sales.

Jeffrey R. Reinhart (BS 1990 electrical engineering) of Cedar Rapids, Iowa, is a regional sales engineer with Novelty Machine & Supply Company, based in Sioux City, Iowa.

Choong Han Chu (BS 1991 mechanical engineering) is senior project manager, Hydro Tasmania Consulting, Hobart, Australia. He manages projects in the renewable energy areas of wind and hydro. Hydro Tasmania aims to be the largest producer of wind energy in Australia in the next three years, with over 600 MW currently in development.

Seth P. Lewis (BS 1991 industrial engineering) is vice president of operations with the International Group of Companies, Melrose Park, Ill.

Dawn L. Thompson (BS 1991 chemical engineering) is a national account manager with Hygienetics Environmental Services in Tampa, Fla.

Wu-Joan Kim (PhD 1991 mechanical engineering) is a professor in the department of naval architecture and marine engineering at Mokpo National University, Chunnam, Korea.

Daryl J. Ashbacher (BS 1992 industrial engineering) is a plant manager with the U.S. Postal Service, Peoria, Ill.

Stephanie Caswell Schuckers (BS 1992 electrical engineering) is a research associate professor in the Department of Electrical and Computer Engineering at Clarkson University, Potsdam, N.Y. Her research focuses on processing and interpretation of signals that arise from the human body. Signals include the electrocardiogram, biometric signals like fingerprints, pulse oximetry, respiration, and electroencephalograms. These signals are used to predict and detect various cardiovascular



Left: Parents, students, alumni, and friends enjoy breakfast at the Oct. 25 Family Weekend Homecoming Tailgate Open House.

Below left: V.C. Patel (left), University of Iowa Distinguished Professor of Mechanical Engineering and director of IIHR-Hydrosience & Engineering and Richard Stanley (MS 1963 in sanitary engineering) visit during the June 6 C. Maxwell Stanley Hydraulics Laboratory Renaming Ceremony.

Below: John Dawson (BS 1941 civil engineering), son of the late Professor and Engineering Dean Francis Dawson, converses with students during Spring Alumni Weekend activities.



diseases (sudden cardiac death, heart failure, sudden infant death), to perform identification for security applications/health care, or to study learning and memory.

Lyle J. Misbach (BS 1992 civil engineering) is a senior traffic designer with the Oregon Department of Transportation, Salem, Ore.

Mark R. Poppen (BS 1992 Industrial Engineering) is director of operations with Liquidmetal Technologies in Lake Forest, Calif.

Jane Schweer Walrath (BS 1992 industrial engineering) is a sales engineer with Cutler-Hammer in Minnetonka, Minn.

James E. Sixta II (BS 1992 electrical engineering) is president of S&S Innovations of West Des Moines, Iowa. He and partner Mike Rogers developed "Snowball Fight," a family card game based on snowball fights Sixta had as a youth. The game is being sold locally in specialty toy and game stores or online at www.snowballfight.com

Todd M. Smith (BS 1992 industrial engineering) is a senior manager in the Department of Enterprise Application Development at Takeda Pharmaceuticals North America, Park Ridge, Ill.

Vivek K. Goyal (BS 1993 electrical engineering) joined the department of Electrical Engineering and Computer Science and the Research Laboratory of Electronics at the Massachusetts Institute of Technology as assistant professor.

Timothy R. Hughes (BS 1993 electrical engineering) is an assistant professor and Canada Research Chair in the Banting and Best Department of Medical Research, Faculty of Medicine, at the University of Toronto.

Melissa Mueller (BS 1993 industrial engineering) is a flow improvement engineer with Allsteel, Muscatine, Iowa.

C. Jack Feng (MS 1993, PhD 1995 industrial engineering) is associate professor of Industrial & Manufacturing Engineering & Technology at Bradley University, Peoria, Ill. He was awarded the 2003 College of Engineering & Technology Faculty Award for Excellence in Research and Scholarship at Bradley University on February 19, 2003.

John Bullinga (BS 1994 biomedical engineering) received his medical degree from The University of Iowa in 1998. He is now a fellow in cardiac electrophysiology, New York University. He is designing and testing methods in the clinical electrophysiology laboratory

for spatiotemporal control of cardiac repolarization oscillations. The fundamental approach of this research is based on engineering that he learned at Iowa.

James C. Griffin, Jr. (BS 1994 electrical and computer engineering) is co-founder of InnoMatix, LLC. The company, located in the University of Iowa's Oakdale Research Park, will provide product support to users of NEXIQ's In-Vehicle Information System (IVIS). Customers of IVIS include Ford Motor Co., Nissan Design America and Johnson Controls.

Mark G. Brown (BS 1995, MS 1997 electrical engineering) is a senior software engineer with Innovative Software Engineering, located in the Technology Innovation Center, Oakdale Campus, Iowa City, Iowa. ISE was founded in January 2003.

Lisa A. Fickenscher (BS 1995 chemical engineering) is a process engineer with Cargill Soy Protein Solutions, Sidney, Ohio.

Kimberly Langley Sweetland (BS 1995 mechanical engineering) is an applications engineer with BorgWarner Turbo Systems, Arden, N.C.

Matthew Finnegan (BS 1996 mechanical engineering) is employed by Black and Veatch, Overland Park, Kans.

Sean S. Swidler (BS 1996 biomedical engineering) recently opened a law practice focusing on patent, trademark, copyright, and e-commerce law in Chicago, Ill.

Scott M. Willson (BS 1996 civil engineering) is a project manager with Manhard Consulting, Ltd., Vernon Hills, Ill.

Baizhong Lin (PhD 1996 civil engineering) is a product engineer with Daimler Chrysler, Detroit, Mich.

Rachel C. Fellman (BS 1997 civil engineering) is employed with the U.S. Army Corps of Engineers, Rock Island District.

Alyse R. Solberg Stofer (BS 1997 biomedical engineering) of Woodbury, Minn., was featured in a National Engineers Week ad in USA Today, February 17, 2003. She was nominated by the Society of Women Engineers and by her employer, Data Sciences International, St. Paul, Minn., for developing a device that monitors congestive heart failure and assists physicians in applying drug therapies.

Katherine Spedl Kinne (BS 1997 industrial engineering) is a quality control manager for Hubbard One in Chicago, Ill.

Jennifer D. Studt (BS 1997 biomedical engineering) is a field clinical engineer with St. Jude Medical Cardiac Rhythm Management Division (CRMD), Sylmar, Calif.

Matthew J. Bielawski (BS 1998 chemical engineering) is a product engineer with Exide Technologies, Fort Smith, Ark.

Jon F. Mansheim (BS 1998 mechanical engineering) is a senior process engineer with 3M Touch Systems, 3M Optical Systems Division, Milwaukee, Wis. He was on campus in September to participate in the Engineering Career Fair.

Grant Robbins (BS 1998 mechanical) is a production general supervisor with 3M Abrasives Manufacturing Organization, Cottage Grove, Minn.

Phil A. Hedrick (BS 1999 industrial engineering) is a consultant with Cap Gemini Ernst & Young, Chicago, Ill.

2000s

Jennifer R. Belbis (BS 2000 chemical engineering) is a corporate facilities engineer with Watson Pharmaceuticals, Inc., Corona, Calif. She manages projects for product expansion facilities in Copiague, N.Y. and Salt Lake, Utah.

Michael Farrell (BS 2000 industrial engineering) is a PhD student and researcher at Georgia Institute of Technology, Atlanta, Ga.

Stephen J. Neuman (BS 2000 mechanical engineering) is a manufacturing engineer with Silgan Plastics, Monroe, Ga.

Mark H. Runge (BS 2000 mechanical engineering) is employed by Caterpillar, Inc., Peoria, Ill. He is the lead field test engineer for the on-highway truck 15-liter engines. He was recently given responsibility for field testing Caterpillar's newest engines with ACERT™ technology.

Benjamin H. Schneider (BS 2000 industrial engineering) is a manufacturing engineer, Worldwide Agricultural Equipment Division of John Deere Waterloo Works, Waterloo, Iowa.

Hasby Tanjung (BS 2000 industrial engineering) is a consultant with Computer Enterprise, Inc., Harrisburg, Pa.

Matthew M. Warren (BS 2000 chemical engineering) of Burbank, Calif., is a consultant with Accenture.

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Renee D. Rogge (PhD 2000 biomedical engineering) assistant professor of biomedical engineering at Mercer University is a summer faculty fellow of the American Society of Engineering Education and NASA. Her research at the Anthropometry and Biomechanics Facility (ABF) at Johnson Space Center, Houston is to develop a 3-D model of a human body that will better enable researchers to evaluate space suits and hardware used by astronauts.

Kellan B. Brumback (BS 2001 industrial engineering) is a team leader/engineer with General Mills, Kansas City, Mo.

Chad A. Donaubauer (BS 2001 industrial engineering) is a senior analyst with Cerner Corporation. Chad lives in New York, N.Y.

Bradley D. Peyton (BS 2001 chemical engineering) is employed with MidAmerican Energy, Davenport, Iowa.

Deanna Sorak Frushour (BS 2001 industrial engineering) of Indianapolis, Ind., is an analyst with Accenture.

Nicole Winokur (BS 2001 electrical engineering) is a software engineer with Datex-Ohmeda, Inc., Madison, Wis.

Jim Hu (MS 2001 mechanical engineering) is an environmental engineer, Pollution Prevention Services, Iowa Department of Natural Resources, Des Moines, Iowa.

Amit Kumar Vyas (MS 2001 industrial engineering) is a consultant (S/W Engineer) with Cap Gemini Ernst and Young US LLC, Chicago Ill.

Kathryn Blasberg (BS 2002 chemical engineering) is a chemical engineer with URS Corporation, Rolling Meadows, Ill.

Andrew P. Glick (BS 2002 industrial engineering) is a value engineer working on the JSF (joint strike fighter) F-35 program at Lockheed Martin Aeronautics Company, Fort Worth, Tex.

Toby Hunemuller (BS 2002 civil engineering) is employed with the U.S. Army Corps of Engineers Rock Island District.

Ensign Andrew Kopacz (BS 2002 civil engineering) is stationed in Charleston, S.C.

Benjamin Moline (BS 2001 civil engineering) is an assistant engineer with RBF Consulting, Walnut Creek, Calif.

1930s

Paul W. Ammons (BS 1931 mechanical engineering) of Spokane, Wash., December 30, 2002.

Arthur E. Stanley (BS 1931 civil engineering) of Gainesville, Fla., August 15, 2003.

Harry O. Paxson (BS 1932 civil engineering), of Opelika, Ala., June 9, 2001.

Curtis M. Shew (BS 1933 industrial engineering) of Manchester, N.H., May 19, 2002.

William Busby (BS 1935 mechanical engineering) of Waco, Tex., October 17, 2002.

Kenneth L. Meyer (BS 1935 chemical engineering) of Morton, Ill., June 14, 2003.

Robert E. Aikins (BS 1937 chemical engineering) of Salt Lake City, Utah, March 6, 2001.

Howard L. Clark (BS 1937 electrical engineering) of Ballston Lake, N.Y., February 19, 2003.

Carl E. Kindsvater (MS 1937 mechanics and hydraulics) of Waitsfield Vt., November 15, 2002.

Harold C. Foerstner (BS 1938 mechanical engineering) of Soap Lake, Wash., May 30, 2003.

Ernest E. Mohr (BS 1938 chemical engineering) of Pittsford, N.Y., September 7, 2002.

Arlo R. Gill (BS 1939 mechanical engineering) of Guanajuato, Mexico, January 16, 2002.

Howard Kasch (BS 1939 electrical engineering) of Harrisburg, Va., May 26, 2003.

1940s

Alan W. Baldwin (BS 1940 electrical engineering) of Arlington, Va., February 21, 2003.

Alfred C. Peterson (BS 1940 mechanical engineering) of Tucson, Ariz., March 9, 2003.

Conrad L. Peterson (BS 1940 industrial engineering) of Tacoma, Wash., June 15, 2003.

Lloyd E. Keil (BS 1941 mechanical engineering) of Weslaco, Tex., February 13, 2003.

Julian R. Fleming (MS 1941 mechanics and hydraulics) of Jackson, Tenn., October 14, 2002.

Richard J. Fountain (BS 1942 electrical engineering) of Auburndale, Fla., October 14, 2002.

James F. Seitz (BS 1942 mechanical engineering) of San Francisco, Calif., February 19, 2003.

Clarence C. Crumley (BS 1943, MS 1949 civil engineering) of Lansing, Mich., March 29, 2000.

Edward F. Ehrman (BS 1943 electrical engineering) of Cedar Crest, Minn., November 6, 2002.

Arthur Spillberg (BS 1943 civil engineering) of Boynton Beach, Fla., May 8, 2000.

Charles A. Lamb (BS 1945 mechanical engineering, MS 1948 mechanics and hydraulics) of Anderson, S.C., August 9, 2002.

John C. Latimer (BS 1947 electrical engineering) of Seminole, Fla., February 1, 2003.

Cletus P. Sherman (BS 1948 mechanical engineering) of Fullerton, Calif., April 25, 2000.

George L. Smith (BS 1948 civil engineering) of Fort Collins, Colo., April 25, 2001.

Howard W. Ward (BS 1948 mechanical engineering) of Fort Pierce, Fla., October 1, 2001.

Robert J. Wheeler, Jr. (BS 1948, MS 1949, PhD 1958 civil engineering), of Columbia, Mo., June 16, 2002.

Col. James A. Betts (MS 1948 civil engineering) of Green Valley, Ariz., October 25, 2002.

Charles B. Thompson (MS 1948 mechanics and hydraulics), of Fountain Hills, Ariz., August 6, 2003.

Everett W. Kuntz (BS 1949 electrical engineering) of Mounds View, Minn., April 30, 2003.

Harold E. Schmidt (BS 1949 civil engineering) of Lake Suzy, Fla., June 11, 2002.

Paul E. Shipley (BS 1949 industrial engineering) of Bartlesville, Okla., April 30, 2000.

Robert E. Stewardt, Jr. (BS 1949 mechanical engineering) of Fulshear, Tex., May 17, 2000.

1950s

Alvin R. Brown (BS 1950 electrical engineering) of Kowloon, Hong Kong, August 28, 2001.

Donald L. Jacobs (BS 1950 mechanical engineering) of New Hope, Minn., June 10, 2000.

Col. John E. Bowman (MS 1950 civil engineering) of Brookline, Mass., January 20, 2001.

Allen A. Brammerlo (BS 1951 electrical engineering) of Holland, Mich., November 17, 2002.

Lawrence W. Hayes (BS 1951 mechanical engineering) of Bettendorf, Iowa, March 5, 2003.

Miles J. Sullivan (BS 1951 mechanical engineering) of Clifton, Va., May 22, 2003.

Rex H. Goff, Jr. (BS 1953 civil engineering) of Redwood City, Calif., October 22, 2002.

Chuan Tze Hsiung (MS 1953 mechanics and hydraulics) of Bethlehem, Pa., July 16, 2003.

James K. Beverlin (BS 1954 civil engineering) of MacClenny, Fla., August 31, 2001.

Harold R. Miller (BS 1954 electrical engineering) of Hannibal, Mo., August 4, 2003.

Maurice D. Kilbridge (PhD 1954 industrial engineering) of Lexington, Mass., January 6, 2003.

Richard L. Dunlavy (BS 1956 chemical engineering) of Savannah, Ga., June 15, 2003.

John R. Everingham (BS 1956, MS 1957 chemical engineering) of San Rafael, Calif., April 30, 2003.

August Raja (BS 1957 mechanical engineering) of Yarrow Point, Wash., June 30, 2003.

C. David Wahlstrom (BS 1958 mechanical engineering) of Evergreen, Colo., December 18, 2002.

Clarence H. Henderson (BS 1959 electrical engineering) of Des Moines, Iowa, January 23, 2003.

1960s

Murry J. Pruyn (BS 1960 mechanical engineering) of Lakeville, Minn., February 17, 2003.

James J. Roder (BS 1960 mechanical engineering) of St. Louis, Mo., August 15, 2000.

K. Joachim J. Malsy (MS 1960 mechanics and hydraulics) of Bogota, Colombia, July 20, 2002.

Mell F. O'Donnell (BS 1961 mechanical engineering) of Bellaire, Tex., November 30, 2002.

Howard A. Gustafson (BS 1962 civil engineering) of Phoenix, Ariz., July 17, 2003.

Kenneth A. Park (BS 1962 mechanical engineering) of Cliffwood Beach, N.J., July 7, 2000.

Michael F. Conlin (BS 1964 electrical engineering) of Coleman, Tex., January 8, 2000.

Louis A. O'Connor (BS 1966 civil engineering) of the Philippines, January 5, 2003.

Lane H. Mashaw (MS 1966 civil engineering) of Lee's Summit, Mo., March 12, 2003.

1970s

Larry O. Mullins (BS 1970 electrical engineering) of Pickerington, Ohio, August 1, 2000.

James K. Burrell (BS 1972 mechanical engineering) of Canton, Mich., July 17, 2002.

Vahidedin E. Hoda (MS 1974 civil engineering) of Walnut Creek, Calif., February 5, 2000.

Arthur R. Giaquinta (PhD 1974 mechanics and hydraulics) of Warrenville, Ill., June 4, 2003.

David L. Coleman (BS 1977 mechanical engineering) of Dickeyville, Wis., October 30, 2002.

Engineering Honor Roll for 2002

This honor roll gratefully recognizes graduates, faculty, and friends who contributed \$100 or more to the College of Engineering through The University of Iowa Foundation in 2002. High-level annual contributors to the college's Engineering Excellence Fund and other college-wide funds are acknowledged in several recognition clubs followed by a list of all other contributors to the college.

Contributors to the College of Engineering who were members of The Presidents Club by December 31, 2002, are listed in **bold type**. The Presidents Club permanently recognizes the most generous contributors to The University of Iowa. All contributors of \$100 or more to any area of The University of Iowa in 2002 were recognized in the UI Foundation's 2002 Annual Report on Giving.

The UI College of Engineering Dean's Club recognizes alumni and friends who contribute (individually or jointly with their spouses) \$1,000 or more annually to the Engineering Excellence Fund or other college-wide funds. The following contributors provided support at the Dean's Club level in 2002:

Dean's Club

The Transit Club recognizes those who contribute (individually, or jointly with their spouses) from \$500 through \$999 annually to the Engineering Excellence Fund or other college-wide funds. The following alumni and friends provided support at the Transit Club level in 2002:

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The MECCA Club recognizes those who contribute (individually or jointly with their spouses) from \$250 through \$499 annually to the Engineering Excellence Fund or other college-wide funds. The following alumni and friends provided support at the MECCA Club level in 2002:

MECCA Club

The Engineering Associates include corporations, foundations, and other organizations that contribute \$1,000 or more annually to the Engineering Excellence Fund or other college-wide funds. The following contributors provided support at the Engineering Associates level in 2002:

Engineering Associates

Additional contributors to the College of Engineering in 2002:

Corrections

The recognition extended to those listed in this honor roll is one small way to thank contributors. Every effort has been made to ensure that this honor roll is accurate. If your name has been omitted, misspelled, or misplaced, we apologize.

Please contact the UI Foundation with any questions or corrections.

Thank you!

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The Engineering Excellence Fund is a college-wide resource that strengthens a variety of educational programs and activities for undergraduate and graduate students and helps to maintain excellence throughout the UI College of Engineering.

To contribute to the Engineering Excellence Fund, please send your check, payable to The University of Iowa Foundation, with your completed contribution form to the address shown. Thank you.

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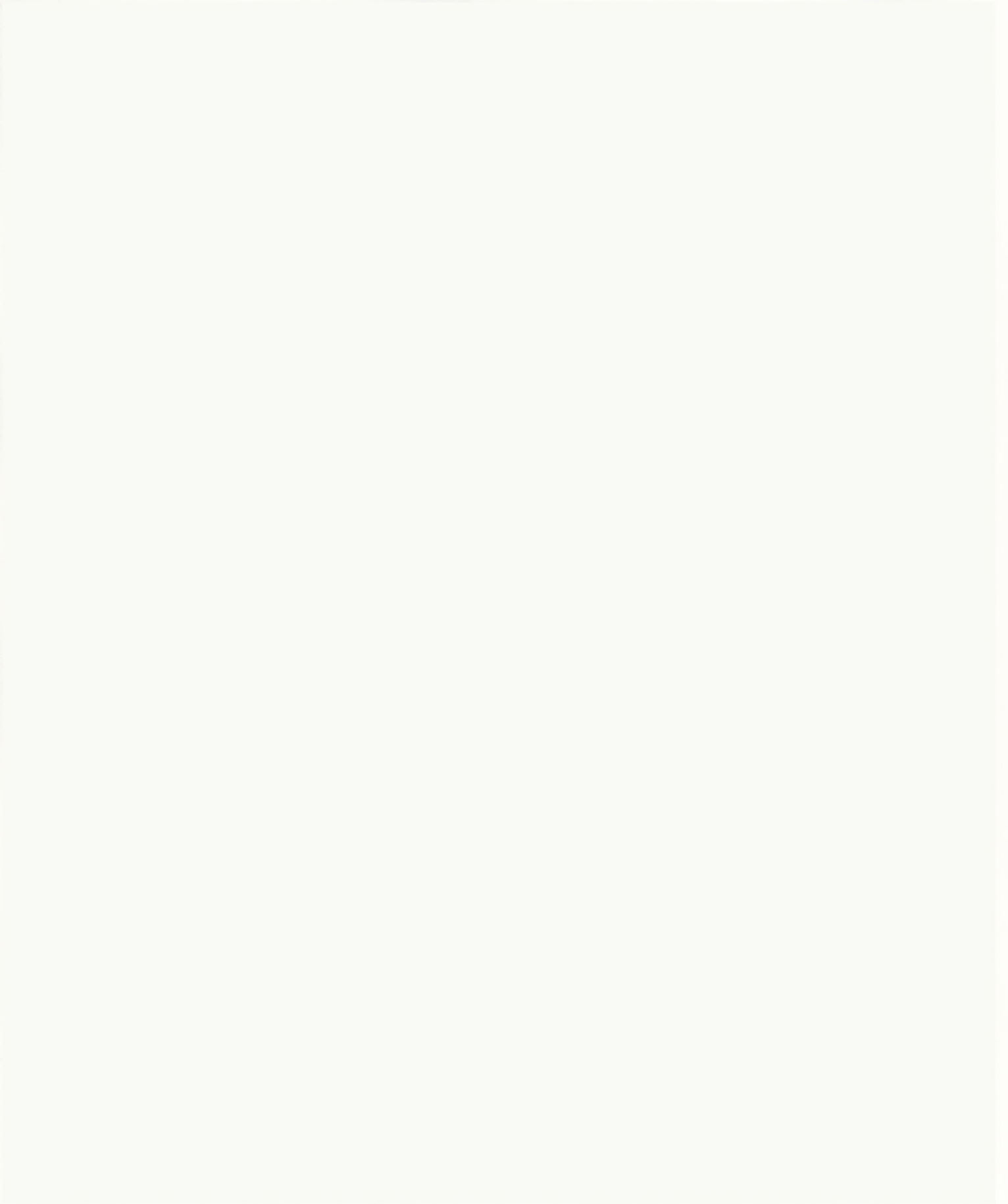
If you would like more information about private support for the College of Engineering, Kevin Collins, the UI Foundation's director of development for the College of Engineering, would be happy to work with you. You may contact him at:

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E-mail address:
kevin-collins@uiowa.edu

Web page: [http://
www.uiowa.edu/~uifdn/](http://www.uiowa.edu/~uifdn/)



World-Class Connections

At the College of Engineering, we have the good fortune to count a strong and diverse cohort of international residents among our alumni and friends. When Henry Maksoud of Sao Paulo, Brazil visited campus this fall, he bumped into an old friend from Hillcrest dorm, Paul Polydoran of Des Moines, Iowa. After the initial surprise of seeing each other after 50 years, they enjoyed hours of conversation. Witnessing such a chance encounter, I realized that both the College and the profession are blessed with intercultural opportunities to enrich learning, friendships, and careers.

Through U.S. citizens abroad and international students at Iowa, we enjoy rich relations with our world citizens. Our Distinguished Engineering Alumni Academy reflects this wealth in the 30 percent who are international residents. We have extended our reach by increasing student participation in study abroad programs, through efforts by IIHR—Hydroscience & Engineering (back cover) to recruit international graduate students, and through our visits with alumni in South Korea, Taiwan, Brazil, and Turkey. In the Uzuner brothers profile (pages 6–9) and the report from the Mexican water project (pages 12–13), this issue of *Iowa Engineer* shows how richly integrated our engineering community at Iowa truly is.

When visiting international alumni in their home countries, I have observed a very keen affinity among them. Their experiences in Iowa City were some of the most formative in their lives, and they are expressively grateful for their engineering education. Intercultural experiences enrich our lives and our learning beyond traditional education. The philanthropic investments you make in the College allow us to recruit international students and support study abroad opportunities. Intercultural experiences and international relations continue to grow in importance in the engineering profession, and your support of the Engineering Excellence Fund allows the College to create a climate for the exchange of ideas, experiences, and cultures that will shape lives and careers.



Kevin Collins
is at The
University
of Iowa
Foundation.

Get packing!



The Yacyreta Hydropower Station produces one fourth of the power in Argentina. However, the dam has controversial issues especially relating to resettlement of the reservoir area.

International study courses

In 1998 IIHR—Hydrosience & Engineering launched International Perspectives in Water Resources Planning, the first formal study abroad program for graduate students in engineering, economics, planning, law, and the environmental, social, or political sciences. The course offers students a view of the historical, cultural, social, economic, ethical, environmental, and political conditions related to water resource projects in particular countries. Since the first class, which examined water resource issues in India, participants have studied and visited Taiwan, Japan, China, Eastern Europe, Argentina, Brazil, and Paraguay.

Another course enabled engineering students to join their peers from the UI Tippie College of Business during a December-January session in London. International Business and Infrastructure was taught by University of Iowa faculty members Peter O'Grady, professor of mechanical and industrial engineering, and Carol Fethke, professor of economics, who used lectures, case studies, and site visits to help their students develop a firsthand understanding of engineering and business practices in the U.S. and Britain. Fifty students, including 15 from the College of Engineering, participated in last year's course, which was taught by Wilf Nixon, University of Iowa professor of civil and environmental engineering.



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